



APPENDIX A GLOSSARY

A.1 Aggregate

Aggregate	A hard inert mineral material, such as gravel, crushed rock, slang, or sand.
Coarse Aggregate	Aggregate retained on the 2.36 mm (No. 8) sieve.
Fine Aggregate	Aggregate passing the 2.36 mm (No. 8) sieve.
Sand	Fine aggregate resulting from natural disintegration and abrasion of rock or processing of completely friable sandstone.
Dense-Graded Aggregate	Aggregate that is graded from the maximum size down through filler with the object of obtaining an asphalt mix with a controlled void content and high stability.
Open-Graded Aggregate	Aggregate containing little or no mineral filler or in which the void spaces in the compacted aggregate are relatively large and interconnected.
Sandy Soil	A material consisting essentially of fine aggregate particles smaller than 2.36 mm (No. 8) sieve and usually containing material passing a 75 μm (No. 200) sieve. This material usually exhibits some plasticity characteristics.
Reclaimed Asphalt Pavement (RAP)	Existing asphalt mixture that has been pulverized, usually by milling, and is used like an aggregate in the recycling of asphalt pavements.

A.2 Asphalt

Asphalt	"A dark brown to black cementitious material in which the predominating constituents are bituminous which occur in nature or are obtained in petroleum processing" (ASTM D8) Asphalt is a constituent in varying proportions of most crude petroleum.
Asphalt Cement	Asphalt that is refined to meet specifications for paving, roofing, industrial, and special purposes. Heat is required to make it fluid.
Asphalt Prime Coat	An application of asphalt primer to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime penetrates or is mixed into the surface of the base and plugs the voids, hardens the top and helps bind it to the overlying asphalt course.
Asphalt Primer	A fluid asphalt of low viscosity (highly liquid) that penetrates into a non-bituminous surface upon application.
Asphalt Tack Coat	A very light application of asphalt emulsion diluted with water. It is used to ensure a good bond between the surface being paved and the overlying new course.
Cutback Asphalt	Asphalt cement that has been liquefied by blending with petroleum solvents.
Asphalt Emulsion	An emulsion of asphalt cement and water that contains a small amount of an emulsifying agent. Emulsified asphalt droplets may be of either the anionic (negative charge) or cationic (positive charge).

A.3 Asphalt Emulsion

Emulsifying Agent or Emulsifier	The chemical added to the water and asphalt that keeps the asphalt in stable suspension in the water. The emulsifier determines the charge of the emulsion and controls the breaking rate.
Breaking	The phenomenon when the asphalt and water in the emulsion separate, beginning the curing process. The rate of breaking is controlled primarily by the emulsifying agent.
Curing	The development of the mechanical properties of the asphalt binder. This occurs after the emulsion has broken and the emulsion particles coalesce and bond to the aggregate.
Residue	The asphalt binder that remains after the emulsion has broken and cured.

A.4 Equipment



Aggregate Spreaders	Machines used for spreading aggregate evenly at a uniform rate on a surface.
Mechanical Spreaders	Spreader boxes that are mounted on wheels. The spreaders are attached to and pushed by dump trucks.
Self-Propelled Spreaders	Spreaders having their own power units and two hoppers. The spreader pulls the trucks as it dumps its load into the receiving hopper. Conveyor belts move the aggregate forward to the spreading hopper.
Tailgate Spreaders	Boxes with adjustable openings that are attached to and suspended from the tailgates of dump trucks.
Whirl Spreaders	Spreaders that are attached to or are built onto dump trucks. Aggregate is fed onto the spreader disc through an adjustable opening and the speed of the disc controls the width of spread.
Aggregate Trucks	Trucks equipped with hydraulic lifts to dump the aggregate into the spreader.
Asphalt Distributor	A truck or a trailer having an insulated tank and a heating system. The distributor applies asphalt to a surface evenly and at a uniform rate.
Cold-In-Place Recycling Train	A unit consisting of a large milling machine towing a screening/crushing plant and pugmill mixer for the addition of asphalt emulsion and production of cold mix base.
Milling Machine	A self-propelled unit having a cutting head equipped with carbide tipped tools for the pulverization and removal of layers of asphalt materials from pavements.
Reclaiming Machine	A self-propelled unit having a transverse cutting and mixing head inside of a closed chamber for the pulverization and mixing of existing pavement materials with asphalt emulsion. Asphalt emulsion (and mixing water) may be added directly through the machine by a liquid additive system and spray bar.
Power Sweeper	A power operated rotary broom used to clean loose material from the pavement surface.
Pneumatic-Tired Rollers	Rollers with a number of tires spaced so their tracks overlap while giving kneading compaction.
Steel-Wheel Static Rollers	Tandem or three-wheel rollers with cylindrical steel rolls that apply their weight directly to the pavement.
Steel-Wheel Vibratory Rollers	A roller having single or double cylindrical steel rolls that apply compactive effort with weight and vibration. The amount of compactive force is adjusted by changing the frequency and amplitude of vibration.
Stationary Plants	Mixing plants located at a mixing site that mix asphalt emulsion and aggregates hot, warm, or cold. The simplest plants are for cold mixing and consist of aggregate feeder bin(s), asphalt and water metering systems, and a pugmill for mixing.
Travel Plants	Self-propelled pugmill plants that proportion and mix aggregates and asphalt as they move along the road. There are three general types of travel plants: <ol style="list-style-type: none"> 1. One that moves through a prepared aggregate windrow on the roadbed, adds and mixes the asphalt as it goes, and rear discharges a mixed windrow ready for aeration and spreading. 2. One that receives aggregate into its hopper from haul trucks, adds and mixes asphalt, and spreads the mix to the rear as it moves along the roadbed. 3. Batch mixing units, such as slurry machines, that haul materials to the site and then mix and apply the materials.

A.5 Types of Asphalt Surface Treatments and Mixes



Asphalt Emulsion Mix (Hot)	A mixture of asphalt emulsion and mineral aggregate usually prepared in a conventional hot mix asphalt plant at a temperature less than 125°C (260°F). It is spread and compacted at a temperature above 95°C (200°F).
Pavement Base and Surface	The lower or underlying pavement course atop the subbase or subgrade and under the top or wearing course.
Plant Mix (Cold)	A mixture of asphalt emulsion and mineral aggregate prepared in a central mixing plant and spread and compacted while the mixture is at or near ambient temperature.
Maintenance Mix	A mixture of asphalt emulsion and mineral aggregate for use in relatively small areas to patch holes, depressions, and distressed areas in existing pavements. Appropriate hand or mechanical methods are used in placing and compacting the mix.
Recycled Asphalt Mix	A mixture produced after processing existing asphalt pavement materials. The recycled mix may be produced by hot or cold mixing at a plant, or by processing the materials cold and in-place.
Asphalt Application	The application of sprayed asphalt coatings not involving the use of aggregates.
Asphalt-Aggregate Applications	Applications of asphalt material to a prepared aggregate base or pavement surface followed by the application of aggregate.
Single Surface Treatment	A single application of asphalt to a road surface followed immediately by a single layer of aggregate. The thickness of the treatment is about the same as the nominal maximum size aggregate particles.
Multiple Surface Treatment	Two or more surface treatments placed one on the other. The aggregate maximum size of each successive treatment is usually one-half the previous one, and the total thickness is about the same as the nominal maximum size of the first course. A multiple surface treatment may be a series of single treatments that produces a pavement course up to 25 mm (1 in.) or more in thickness. A multiple surface treatment is a denser wearing and water-proofing course than a single surface treatment, and it adds some strength.
Seal Coat	A thin surface treatment used to improve the surface texture and protect an asphalt surface. The main types of seal coats are surface treatments, fog seals, and sand seals. slurry seals, and micro-surfacing, cape seals, and sandwich seals.
Fog Seal	A light application of diluted asphalt emulsion. It is used to renew old asphalt surfaces, seal small cracks and surface voids, and inhibit raveling.
Slurry Seal	A mixture of emulsified asphalt, well-graded fine aggregate, mineral filler or other additives, and water. It is applied from 3 to 10 mm (1/8 to 3/8 in.) thick and used to renew pavement surfaces and retard moisture and air intrusion into underlying pavement. Slurry seal will fill minor cracks, restore a uniform surface texture, and restore friction values.
Micro-Surfacing	A mixture of polymer modified asphalt emulsion, crushed dense graded aggregate, mineral filler, additives, and water. Micro-surfacing provides thin resurfacing of 10 to 20 mm (3/8 to 3/4 inch) to the pavement and returns traffic use in one hour under average conditions. Materials selection and mixture design make it possible for micro-surfacing to be applied in multiple applications and provide minor reprofiling. The product can fill wheel ruts up to 40 mm (1.5 in.) in depth in one pass and produces high surface friction values. Micro-surfacing is suitable for use on limited access, high-speed highways as well as residential streets, arterials and roadways.
Cape Seal	A surface treatment where a chip seal is followed by the application of either slurry seal or micro-surfacing.
Sandwich Seal	A surface treatment consisting of the application of a large aggregate, then a spray applied asphalt emulsion (normally polymer modified), and covered with a smaller aggregate.